



PubMed	Nucleotide	Protein	Genome	Structure	PMC	Taxonomy	OMIM	Books
Search <input type="text" value="Nucleotide"/>		for <input type="text"/>		<input type="button" value="Go"/>		<input type="button" value="Clear"/>		
Limits		Preview/Index		History		Clipboard		Details
Display <input type="text" value="default"/>	Show: <input type="text" value="20"/>	Send to <input type="text" value="File"/>		<input type="button" value="Get Subsequence"/>				

☐ 1: AJ310479. Homo sapiens mRNA...[gi:12830376]

[Links](#)

LOCUS HSA310479 4372 bp mRNA linear PRI 30-MAY-2001
 DEFINITION Homo sapiens mRNA for potassium voltage-gated channel, shaker-related subfamily, member 7 (KCNA7 gene).
 ACCESSION AJ310479
 VERSION AJ310479.1 GI:12830376
 KEYWORDS KCNA7 gene; Kv1.7 gene; potassium voltage-gated channel, shaker-related subfamily, member*.
 SOURCE Homo sapiens (human)
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1
 AUTHORS Kashuba,V.I., Kvasha,S.M., Protopopov,A.I., Gizatullin,R.Z., Rynditch,A.V., Wahlestedt,C., Wasserman,W.W. and Zabarovsky,E.R.
 TITLE Initial isolation and analysis of the human Kv1.7 (KCNA7) gene, a member of the voltage-gated potassium channel gene family
 JOURNAL Gene 268 (1-2), 115-122 (2001)
 MEDLINE 21261947
 PUBMED 11368907
 REFERENCE 2 (bases 1 to 4372)
 AUTHORS Kashuba,V.
 TITLE Direct Submission
 JOURNAL Submitted (09-FEB-2001) Kashuba V., Microbiology and Tumorbiology Center, Karolinska Institute, Box 280, 171 77, SWEDEN
 FEATURES
 source Location/Qualifiers
 1..4372
 /organism="Homo sapiens"
 /db_xref="taxon:9606"
 /chromosome="19"
 /map="q13.4"
 gene 1..4372
 /gene="KCNA7"
 CDS 357..1727
 /gene="KCNA7"
 /function="potassium voltage-gated channel"
 /standard_name="KV1.7"
 /codon_start=1
 /product="potassium voltage-gated channel, shaker-related subfamily, member 7"
 /protein_id="CAC29065.1"
 /db_xref="GI:12830377"
 /translation="MEPRCPPPCGCCERLVNVLNAGLRFETRARTLGRFPDPTLLGDPAR RGRFYDDARREYFFDRHRPSFDAVLYYYQSGGRLRRPAHVPLDVFLEEVAFYGLGAAA LARLREDEGCPVPPERPLPRAFAARQLWLLFEFPESQAARVLAVSVLVILVSIVVF CLETLPDFRDDRGTGLAAAAAAGPFPAPLNGSSQMPGNPPRLPFNDPFFVETLCIC WFSFELLVRLVCPSKAIFFKNVMNLIDFVAILPYFVALGTALARQRGVGGQAMSLAI LRVIRLVRFRIKLSRHSKGLQILGQTLRASMRELGLLIFFLFIVGVLFSSAVYFAE VDRVDSHFTSIPESEFWWAVVTMTTVGYGDMAPVTVGKIVGSLCAIAGVLTISLPVPV IVSNFSYFYHRETEGEEAGMFSHVDTPCGPLEGKANGGLVDGEVPELPPPLWAPPGK HLVTEV"
 BASE COUNT 930 a 1117 c 1408 g 917 t
 ORIGIN
 1 aaacttgagg agacgcagga caggatcccg gcggcagaag gacggagaga aaggggaccc

```
61  cgggacggga aaggcgagga gcaggcgagg cggcgaggcg cggcgaggga gggcagggcg
121  ggcgtcccg cagagggcgc gcggcgcccc tgcgcgcctc cgcccccgcc gggtcacagt
181  gccccctccc tcgcgcctca gccgcgcctg cgggctatct ttacgcgcgg acaccggaca
241  ccggacaccg ggctggggcg gcggcgaggc cggccgaggc ggccgaggcg gggccgcacc
301  ggggcccggc gtcggggcca cagctcggtt cgcgggtcgc cggggctgcg cgcgccatgg
361  agccgcgggt cccgcgcgcg tcgggtgctg cgcagcggct ggtgctcaac gtggccgggc
421  tgcgcttcga gacgcgggcg cgcagctagg gccgcttccc ggacactctg ctaggggacc
481  cagcgcgccg cggcgcttc cgcagcagcg cgcgcgcgca gtatttcttc gaccggcacc
541  ggcccagctt cgacgcctg ctctactact accagtccgg tggcgggctg cggcgccggc
601  cgcacgtgac gctcgacgtc ttcttgaag aggtggcctt ctacgggctg ggcgcggcgg
661  ccctggcacg cctgcgcgag gacgagggct gcccggtgcc gcccgagcgc cccctgcccc
721  gccgcgcctt cggccgcca cgtgtggctg ttttcgagtt tcccagagag tctcaggccg
781  cgcgcgtgct cggcgtagtc tccgtgctgg tcatcctcgt ctccatcgtc gtcttctgcc
841  tcgagacgct gcctgacttc cgcgacgacc gcgacggcac ggggcttgcg gctgcagccg
901  cagccggccc gttccccgct ccgctgaatg gctccagcca aatgcctgga aatccacccc
961  gcctgccttt caatgacccg ttcttcgtgg ttgagacgct gtgtatttgt tggttctcct
1021  ttgagctgct ggtacgcctc ctggctgtgc caagcaaggc tatcttcttc aagaacgtga
1081  tgaacctcat cgattttgtg gctatccttc cctactttgt ggcactgggc accgagctgg
1141  cccggcagcg aggggtgggc cagcaggcca tgtactggc catcctgaga gtcacccgat
1201  tgggtgcgtg cttccgcctc ttcaagctgt cccggcactc aaagggcctg caaatcttgg
1261  gccagacgct tcgggcctcc atgctgagc tgggcctcct catcttttcc ctcttcacgc
1321  gtgtggctct cttttctagc gccgtctact ttgccaagt tgaccgggtg gactcccat
1381  tcactagcat ccctgagtc ttctgggtgg cggtagtcac catgactaca gttggctatg
1441  gagactggc acccgtcact gtgggtggca agatagtggt ctctctgtgt gccattggcg
1501  gcgtgtgac tattccctg ccagtgcccc tcatgtctc caatttcagc tactttatc
1561  accgggagac agagggcgaa gaggctggga tgttcagcca tgtggacacg cagccttgtg
1621  gccactgga gggcaaggcc aatggggggc tggtagcgg ggaggtacct gagctaccac
1681  ctccactctg ggcaccccca gggaaacacc tggcaccga agtgtagga acagttagg
1741  tctgcaggac ctcacacct cctagaggga gggaggagg gcagggtgga gggcaaggct
1801  gggggaggag gattgggttt aggaagagct aggttaagtc ataacgagt gggaaacact
1861  gagtcttgtt gggctctggg ttgtgtggtt tggtagctcc tgtgggtacc tcctgaagca
1921  gcagcgaatg gcaatgggtt gtgtgtgtt aatgaagact caattgggtc atattactct
1981  gagttgtgca aagctcatgg agccttttgg ggtagtgttg agataggtt ggtcgatca
2041  tttgtgagt ttcttaggtc agtgttgggt ttggttgggt tgtgagtctg ggatagtgtg
2101  gtccagctgc attgttagg attctgtgtt ttggtgggtc ccctagggcc atgttgggtc
2161  aagttagatg gtcccccctg gcattgttga gatcgaatgt gtgtggtgtt aagtttcgtt
2221  gagacatggt ggaatttgt tagctctgtg attcttccag gggcatgtta ttttaggttc
2281  tgtgaacttg cgagtcatgt agaaatgtga agagtccagt ggtagaattt gagctttcta
2341  ggtcacattg ggttaagttt gtatgaccaa atgaatcttg tagggttctg ttgggtttaa
2401  ctgtgtagag gtgtgtggct ggacattttt cgtggccaca gcgagttgag ttgtgtgaa
2461  ttgtacaacc atatgagcct tgtaaggcca gttcagttgg gtcatgccac tgtttgagtc
2521  tcatagggcc atgctgaatt gagtccattt gagtgtgtc actatgtgag tctacagga
2581  agttgggttg agttggactg tgcgaacgag ttccataggg ccacatcggg ctgttttgca
2641  tttagtggta gcaccaggac ccaaaggaaa tagcagtggg gaagcatcat gtatctggga
2701  gcatgcagtg gcgagggtc tgggaggtgt gccgagctgg ctccccagct cgctgtaggg
2761  ggcgggactg gattctgtat ccatgggatt ggggtgtcat ccagaggcga ctgggtaaat
2821  taggaagagg tggatgctcc tcctgtttac cccacatcca cttcattgtg ctgttactc
2881  ccatttctcc ctacagtttt atgctcagac atggaggtca gagccacaag ggaaagggga
2941  gagggggaga aaactgtact ctgtccagac atgatagagg gacagagcca aaaggataga
3001  gaaagagacc cagaaaaagg aagagtgga aaccagaga gacagagacc caaagggaga
3061  gaaacagaga ctcagggaga gggagacaat gacctggagg gtgggtatg gcagagacgc
3121  agaagagagg aacagaaatc cagagtgggg agacagagac caagagcagg ggatagaagc
3181  cgggcgaagt ggcccatgcc tgtaatctca gcactctggg agaccgagga agggggattg
3241  attgaggcca ggagtcaag accagcctgg gcaacatggt gagaccccat ctctacaaaa
3301  aatacaaaaa ttagctgagt gtgggtggc atgcctgtga tcccagctac tcagggaagt
3361  gaggcagaaa gatcccttga ccctgagagg tagaggctgc attgagccat gattgcacca
3421  ctgactcca gcctgggcaa cagagggagc ccccgctcga acaaaacaa aaaaagagcc
3481  agtgggggag ggagggacag agaccagag ggcagcgtca gacaccaga gttggagaca
3541  gaacaacaga gtctcaggga aagagaacca caatagaaaa aggcagaaaa ggcgggcgc
3601  ggtggctcat gcctgtaacc ccagcacttt gggaggccga ggtgggcaaa ttacgaggtc
3661  aggagatcca gaccatcctg gctaacacgg tgaaaccccg tctctactaa aaatacaaaa
3721  aaattagccg ggtgcggtgg cgggcacctg tagtcccagc tactcgggag gctgaggcag
3781  gagaatggca tgaacctggg aggcggagct tgcagtgagc cgagattgcy ccactgcact
3841  ccagcctggg cagcagagca acactctgtc tcaaaaaaaa aaagaaaaag aaagaaaaag
3901  ccagaaaaag ttggtgcccc tgaacccaag agtgatgtac agtctattcc atagaatcac
```

```
3961 agaacaatcc tgaaccaggc ctgtcaccta ccctccctgc agctcaggaa ggctgtcaga
4021 caggctgggg gcctcactct gttttccagg ggagaaacct gagtctcaga gcaggggagt
4081 ggcttcccaa ggtctcacag cttgtcccca ggggccaggc aggctgtctg tctgcttcac
4141 atgtcccat cagcctgctg ggacacacgg gtcctcctga gtcccgtagc ctcatttctt
4201 acagacgggg aaactgaggc tcagagcagc aggtgttacc caaggtcaca aggccgaaca
4261 ttttcagaaa tctttcagaa ctcaaagggc atttagagga agaaggctga aatcactaac
4321 acatataggg cttcctttgg tatcaaagta ctttacttgg gttaatttat ta
```

//

Revised: July 5, 2002.

[Disclaimer](#) | [Write to the Help Desk](#)
[NCBI](#) | [NLM](#) | [NIH](#)

[Register](#) or Login:

Password:

[Go](#) [Athens Lo](#)**Gene**

Volume 268, Issues 1-2, 2 May 2001, Pages 115-122



doi:10.1016/S0378-1119(01)00423-1

Cite or link using doi

Copyright © 2001 Elsevier Science B.V. All rights reserved.

This Document

Abstract[Full Text + Links](#)[PDF \(971 K\)](#)**Initial isolation and analysis of the human *Kv1.7* (*KCNA7*) gene, a member of the voltage-gated potassium channel gene family**

Actions

[E-mail Article](#)Vladimir I. Kashuba^{a, b, c, d, 1}, Sergei M. Kvasha^{a, c, d, 1}, Alexei I. Protopopov^{a, b, d, 1}, Rinat Z. Gizatullin^a, Alla V. Rynditch^c, Claes Wahlestedt^a, Wyeth W. Wasserman^a and Eugene R. Zabarovsky^{a, b, d}^a Center for Genomics Research, Karolinska Institute, Stockholm, 171 77, Sweden^b Microbiology and Tumor Biology Center, Karolinska Institute, Stockholm, 171 77, Sweden^c Institute of Molecular Biology and Genetics, Ukrainian Academy of Sciences, Kiev, 252627, Ukraine^d Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, 117984, Russia

Received 5 September 2000; revised 19 February 2001; accepted 1 March 2001. Received by J.L. Slightom. Available online 22 May 2001.

Abstract

A novel human potassium channel gene was identified and isolated. The maximal open reading frame encodes a protein of 456 amino acids. The predicted product exhibits 91% amino acid identity to the murine voltage-gated potassium channel protein Kv1.7 (*Kcna7*), which plays an important role in the repolarization of cell membranes. Based on the high similarity, the human gene has been classified as the ortholog of the mouse *Kcna7* and given the name *Kv1.7* (*KCNA7*). A structural prediction identified a pore region characteristic of potassium channels and six membrane-spanning domains. Northern expression analysis revealed the gene is expressed preferentially in skeletal muscle, heart and kidney. However, it is expressed at lower level in other tissues, including liver. A single mRNA isoform was observed, with a size of approximately 4.5 kb. Using fluorescence in situ hybridization, the gene was mapped to chromosomal band 19q13.4 (269.13 cR₃₀₀₀). A genomic sequence was identified in the database from this region, and the *KCNA7* gene structure determined. Computational analysis of the genomic sequence reveals the location of a putative promoter and a likely muscle-specific regulatory region. Initial comparison to the published murine *Kcna7*cDNA suggested a different N-terminal sequence for the human protein, however, further analysis suggests that the original mouse sequence contained an error or an unusual polymorphism.

Author Keywords: *NotI*-linking clone; Gene structure; Gene mapping**Abbreviations:** BAC, bacterial artificial chromosome; EST, expressed sequence tag; FISH, fluorescence in situ hybridization; ORF, open reading frame; PCR, polymerase chain reaction; RACE, rapid amplification of cDNA ends¹ These authors contributed equally to this work.



Corresponding author. Tel.: +46-8-728-67-37; fax: +46-8-31-94-70; email: vlakas@ki.se

Gene

Volume 268, Issues 1-2, 2 May 2001, Pages 115-122

This Document

- ▶ **Abstract**
- [Full Text + Links](#)
- [PDF \(971 K\)](#)

Actions

- [E-mail Article](#)

[Home](#)[Journals](#)[Abstract Databases](#)[Reference Works](#)[My Alerts](#)[My Profile](#)[? Help](#)

Send [feedback](#) to ScienceDirect

Software and compilation © 2003 ScienceDirect. All rights reserved.

ScienceDirect® is an Elsevier Science B.V. registered trademark.

Your use of this service is governed by [Terms and Conditions](#). Please review our [Privacy Policy](#) for details on how we protect information that you supply.

[illegible]